

# Thanawat Lodkaew

## Research Engineer

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## Research Interests

Machine learning for real-world applications, Lifelong machine learning, Computer vision, Speech analytics, Transfer learning, Deep learning, Loss function

## Education

**B.Sc. in Information Technology**, King Mongkut's Institute of Technology Ladkrabang Aug 2016 - Jun 2020  
Supervisor: Kitsuchart Pasupa GPAX: 3.76/4.00 (First class honors)

## Job Experiences

**Research Engineer**, KASIKORN Business - Technology Group (Bangkok, TH) Oct 2020 - Present  
Supervisor: Theerat Sakdejyont

- Research and develop speech analysis frameworks.

**Co-Researcher**, National Science and Technology Development Agency (Pathum Thani, TH) May 2020 - Sep 2020  
Supervisor: Winai Chonnaparamutt

- Researched and developed a computer vision-based framework for use in robots.

## Internship Experiences

**Undergraduate Researcher**, Data Science and Machine Learning Research Lab (Bangkok, TH) Jul 2017 - May 2020  
Supervisor: Kitsuchart Pasupa

- Researched and invented a new loss function for learning imbalanced data.
- Researched and developed a web platform called Fashion Finder that can search for online stores by providing a photo of the product.
- Researched and invented a computer-vision-based approach for heat detection in cows.
- **Result:** 3 conference papers (ICITEE 2018, ICONIP 2019, ICONIP 2020) and 1 patent.

**Research Intern**, Vidyasirimedhi Institute of Science and Technology (Rayong, TH) May 2019 - Jul 2019  
Supervisor: Supasorn Suwajanakorn

- Research topic: Removing furniture in a room image by utilizing an image inpainting technique.
- Contributed to a project related to human-in-the-loop machine learning.
- **Result:** A journal paper published in IEEE Transactions on Industrial Informatics.

**Student Intern**, National Institute of Technology, Kurume College (Fukuoka, JP) Jun 2018 - Jul 2018  
Supervisor: Yoshimitsu Kuroki

- Research topic: an improvement of the Saak transform using convex optimization on sparse representation.
- **Result:** Experience in living in Japan and working with Japanese colleagues.

## Skills

**Programming languages** Python, Java, MATLAB, C

**Tools & Frameworks** Tensorflow, PyTorch, Google Cloud Platform, Git, Flask

## Honours and Awards

2020 **First Class Honors:** Bachelor of Science, King Mongkut's Institute of Technology Ladkrabang.  
2020 **Honorable Mention Award:** National Software Contest on Artificial Intelligence Application.  
2019 **Third Place:** IST - FR: Gateway to Informatics Research at EECi.  
2018 **JASSO scholarship for short-term study in Japan:** National Institute of Technology, Kurume College (Fukuoka, JP).  
2018 **Third Place:** National Software Contest on Artificial Intelligence Application.  
2017 **Finalist:** International ICT Innovative Services Contest (Taipei, TW).  
2017 **Special Prize Award:** NAPROCK International Programming Contest (Yamaguchi, JP).  
2017 **Finalist:** TechJam Competition on Data Science Squad.  
2017 **Honorable Mention Award:** MUICT DataHack.

## Publications

### Conference Proceedings

1. **Lodkaew, Thanawat** and Kitsuchart Pasupa (2020). Hybrid Loss for Improving Classification Performance with Unbalanced Data. In: *International Conference on Neural Information Processing (ICONIP)*. Springer, pp.807–814.
2. Pasupa, Kitsuchart and **Thanawat Lodkaew** (2019). A new approach to automatic heat detection of cattle in video. In: *International Conference on Neural Information Processing (ICONIP)*. Springer, pp.330–337.
3. **Lodkaew, Thanawat**, Weeruhputt Supsohmboon, Kitsuchart Pasupa, and Chu Kiong Loo (2018). Fashion Finder: A System for Locating Online Stores on Instagram from Product Images. In: *International Conference on Information Technology and Electrical Engineering (ICITEE)*. IEEE, pp.500–505.

### Journal Article

1. Sawadwuthikul, Guntitatt, Tanyatep Tothong, **Thanawat Lodkaew**, Puchong Soisudararat, Sarana Nutanong, Poramate Manoonpong, and Nat Dilokthanakul (2021). Visual Goal Human-Robot Communication Framework with Few-Shot Learning: a Case Study in Robot Waiter System. *IEEE Transactions on Industrial Informatics*.

### Patent

1. Pasupa, Kitsuchart and **Thanawat Lodkaew** (2021). *Automatic Heat Detection of Cow in Video Footage*. T.H. Patent 17621.

## Languages

**Thai** Native

**English** Duolingo English Test: 105/160 (2021)